ABSTRACT OF THE DISCLOSURE

An impluse response $h_{mn}(q)$ of each transmission path is estimated from N received signals r_m (m=1, ⋯, M) and a known signal (for a number of users equal to N, n=1, ⋯, N). M×N matrix **H** (q) having $h_{mn}(q)$ as an element and a Q×Q matrix **H** having **H**(q) as an element are determined (where Q represents a number of multipaths of each transmitted wave and q=0, ⋯, Q-1). A soft decision value $b'_n(k)$ is determined from decoded λ_2 $[b_n(k)]$, and this is used to generate an interference component matrix **B′**(k) to generate an interference replica **H**·**B′**(k). The interference replica **H**·**B′**(k) is subtracted from a received matrix **y**(k) to determine **y′**(k). **y**(k) and **H** are used to determine an adaptive filter coefficient $\mathbf{w}_n(k)$ to be applied to an n-th user in order to eliminate residual interference components in **y′**(k) according to the minimum mean square error criteria. **y**(k) is passed through $\mathbf{w}_n(k)$ to provide a log-likelihood ratio as a received signal from the user n from which interferences are eliminated.